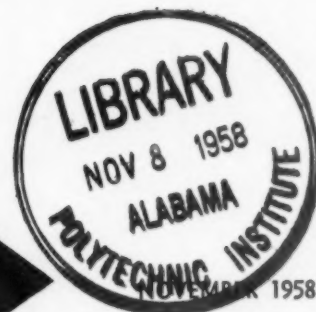


agricultural

marketing



INSPECTED
FOR WHOLESOMENESS
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DEPARTMENT OF
AGRICULTURE
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IN THIS ISSUE

Do prices affect supply?

Tobacco consumption turns upward

A look at our Nation's refrigerator

AGRICULTURAL MARKETING SERVICE
UNITED STATES DEPARTMENT OF AGRICULTURE

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November 1958

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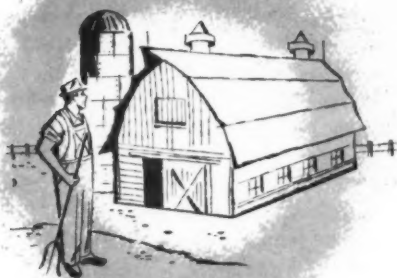
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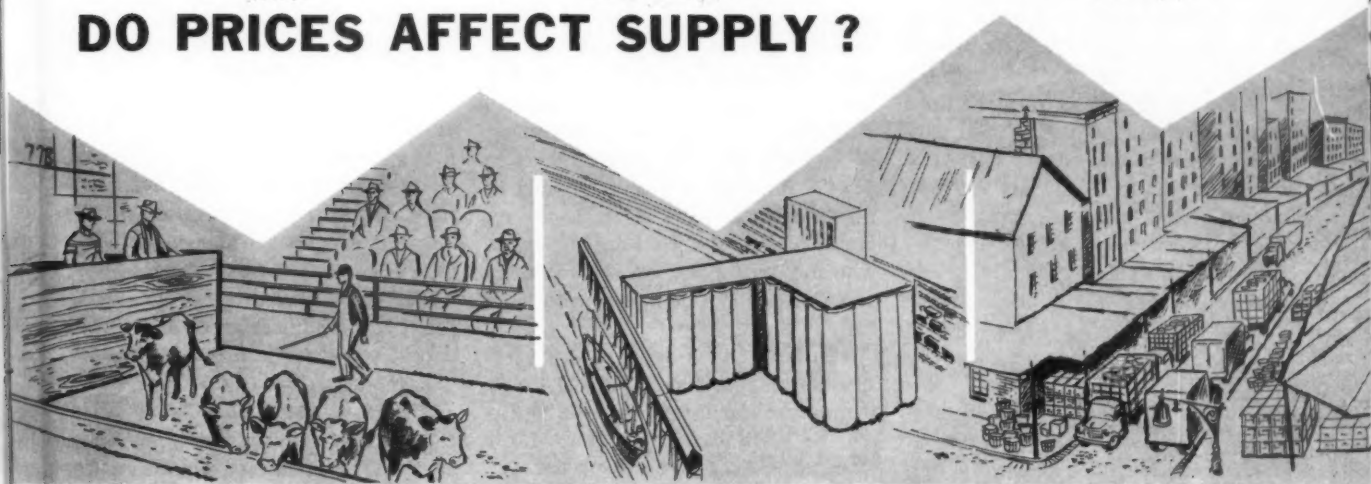
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DO PRICES AFFECT SUPPLY ?



by Frederick V. Waugh

DO THE LAWS of supply and demand still work in agriculture?

Almost everyone accepts the law of demand—that consumers will buy more at a low price than at a high price. Statisticians have measured the effect of prices on consumption, and have been able to forecast rather accurately what would happen to consumption when prices change.

But some people seem to doubt whether the law of supply still works in agriculture. And, until recently, statisticians had not found convincing evidence of it.

The law of supply (if it really is a law) tells us that farmers will produce more at high prices than at low prices.

If both laws still work, a price that

is too high will lead to surpluses, since the high price will restrict consumption and at the same time encourage production.

But if the law of supply no longer works, perhaps farmers might raise their incomes permanently by selling less at a higher price. They could do this only if the law of supply doesn't work—that is, if they can be sure the high price won't call forth an increase in supply that would push prices down.

Adding to our knowledge of how these laws operate will improve marketing efficiency. Thus, all who handle agricultural commodities, as well as those who produce and consume them, will be benefited.

In the past, it has proved easier to study the law of demand than the law of supply. For one thing, in agriculture it takes a while for a change in

price to affect supply. Production of cotton, or milk or apples does not—cannot—respond immediately to a change in price. Production takes time. And the farmer must estimate what price he is likely to receive when his products are ready for market.

Thus, today's price does not affect today's supply of farm products. It may affect supplies next month, next year, or two or more years in the future. During the time it takes for a change in price to affect production, other complications may develop such as drought, Government allotments and quotas, and other things. For that reason, it is not easy to pin down just how much a change in price affects the supply of any farm product.

Fortunately, we're closer to an answer on the effect of changes in price on supplies than ever before. Skilled

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mathematicians, economists, and statisticians working in the Government and elsewhere are using higher mathematics and the new electronic calculating machines to work on this problem.

They find that the law of supply still works in agriculture. Marc Nerlove of the Agricultural Economics Division of AMS has already published studies of cotton, wheat, and corn. He and William Addison, also of the Agricultural Economics Division, are finishing studies of some 20 vegetable crops. Without exception, they find that high prices of any of these commodities, if maintained over a long enough period, will definitely raise production. And low prices, if maintained over a long enough period, will reduce production.

More work needs to be done on livestock, livestock products, and other crops. We will do this as rapidly as possible. We have every reason to expect that the new methods will give similar results for these commodities. The findings already released are running the gauntlet of professional review and are holding up remarkably well.

These studies do not conclude, of course, that price is the only thing

that affects production. Certainly, farm output is affected by weather, acreage allotments and marketing quotas, changes in technology, and several other things. But the studies show that price is a powerful factor. For example, an attractive price maintained over several years may defeat attempts to control production. And an unprofitable price—whether in the United States, the U.S.S.R., or elsewhere—will in time reduce output.

These studies also make highly questionable the statement you sometimes hear that farmers tend to increase output in periods of declining prices in order to maintain income. Doubtless, some farmers sometimes do increase output to offset a drop in price. But this argument applied to farming as a general principle reminds us of the clothing merchant who did such a big business that he could afford to lose a dollar on each suit!

The average farmer, like the average clothing merchant, usually tries to produce the things that he thinks will be most profitable. Only if his expected price is high enough to cover expected costs and give him some profit is he interested in expanding output.

One of the chief difficulties in analyzing changes in supply in response to changes in price is the problem of finding out what price the farmer expects to get for his future production. The statistician must use one of two possible methods: First, he can survey farm opinion; and second, he can try to figure what prices farmers expected by studying their reactions to past prices. Nerlove and others are getting good results by using the second method. This assumes that farmers' expectations are based in large measure on actual prices in the past.

The new methods of studying the effect of prices on supply also have proved useful in studying demand. A change in price may affect consumption both in the short run and in the long run. Often the immediate effect may be slight. But over the long run, a high price may drive consumers to substitute commodities, or a low price may develop new and larger markets.

A recent technical report of AMS, "Distributed Lags and Demand Analysis for Agricultural and Other Commodities," Agriculture Handbook No. 141, discusses how the new methods can be used to measure demand both in the short run and the long run.

Excessive Cleaning Damages Cotton Fiber Quality

MANY cotton ginner are actually damaging the quality of cotton fiber by excessive cleaning and drying. Although this more thorough cleaning raises the grade of the cotton, too much cleaning causes certain detrimental changes in other fiber qualities.

Additional overhead cleaning equipment in gins and a reduction of moisture content of lint tend to increase the number of short fibers. Both these factors also have some adverse effect on the strength of the fiber—effects that are not clearly apparent when it leaves the gin but which become more

obvious during later processing operations.

Additional lint cleaners, on the other hand, do not affect the length of fibers significantly nor do they have a consistent effect upon strength. Lint cleaners, however, cause some breakage during spinning (ends-down). Reductions in lint moisture clearly increased the occurrence of breakage but additional overhead cleaning appeared to have no effect on this factor.

These were the findings of a team of Agricultural Marketing Service research scientists who recently fol-

lowed 48 bales of California cotton through the ginning and spinning processes. The study, made in cooperation with the cotton industry, is part of a national research program designed to improve the marketing of farm products.

A more detailed account of the research and its results may be found in Marketing Research Report No. 269, "Effects of Cleaning Practices at Gins on Fiber Properties and Mill Performance of Cotton." Single copies may be obtained without charge from the Office of Information, USDA, Washington 25, D. C.

Marketing

Meat-type hogs

by Gerald Engelman and
Raymond O. Gaarder



MANY AMERICAN hogs are too fat to suit the American housewife.

Recent studies by the Agricultural Marketing Service show that while total pork consumption has remained fairly stable, the housewife has been spending a smaller share of her food money on pork products and more on competing meats.

In the early 1930's, for instance, 3.3 percent of consumer income went for pork and 2.3 percent for beef. In 1957, it was just the other way around: Pork dropped to 2 percent of consumer income and beef rose to 2.7 percent.

The farmer is losing money on his fat hogs in another way, too. At the beginning of the century, the fat that went into lard was worth about as much as the lean cuts. But in 1957, hams, loins, picnics, and butts were worth two and one-half times as much as fat on a pound-for-pound basis.

To get some idea on how to improve American hogs a team of swine production and marketing specialists went to Canada in 1957. They wanted to learn how the Canadians manage to produce such a remarkable percentage of lean hogs.

The recent AMS study which reported their findings showed a startling difference in grade between the

Canadian hogs and the American, and the difference was all to the good of the svelte northern porker. About 70 percent of the Canadian market hogs would grade U. S. No. 1, and about 25 percent would grade No. 2. The Canadians appear to have just about eliminated the equivalent of U. S. No. 3 from their supply of market hogs.

There are no reliable figures on the number of barrows and gilts in the different grades in the United States. But various estimates put only 15 to 30 percent of our barrows and gilts in U. S. No. 1 grade. This means 70 to 85 percent of the American animals are definitely on the plump side.

The economists and swine experts reported that the lean and profitable shape of the Canadian hog was no accident. Government grades began in Canada in 1922 and within a few years packers were making all of their purchases on the basis of these grades.

In 1934, Canada began shifting from live grading to the carcass weight and grade method, and in 1940 this became the single official system of marketing and pricing hogs throughout the country. By this time, the quality of Canadian hogs had been improved noticeably.

Marketing specialists point out that the grade distribution for Canadian hogs has held its own since the early 1940's, in spite of the fact that the live

weight of hogs marketed has increased about 20 percent. All of which would suggest that Canadian hogs may have become leaner genetically over the years.

The Canadian program has been given another boost by the price differences for the various grades. In Canada the price differentials paid by the packer are $2\frac{1}{2}$ to 3 times wider than have been thought possible in the United States.

Canadian price differentials have been achieved, in part, by such added processing as boning and defatting of cured cuts of pork. The Canadian consumer gets more meat and less fat and bone, and she is willing to pay for the difference.

But Canadian hogs have a native advantage that American hogs lack—their menu. Basic grain concentrates for Canadian hogs are oats and barley, which tend to build less fat than corn. Since corn will probably always be the basic feed in this country, part of the solution for us is to find pigs that are genetically meatier.

The American farmer would produce more meat-type hogs if an appropriate price differential were paid. This would give the housewife a tastier, leaner type of pork, which she probably would buy and serve more often.

The lean, profitable shape of the Canadian hog was no accident. It was the result of a long-term grading program and premiums to growers.



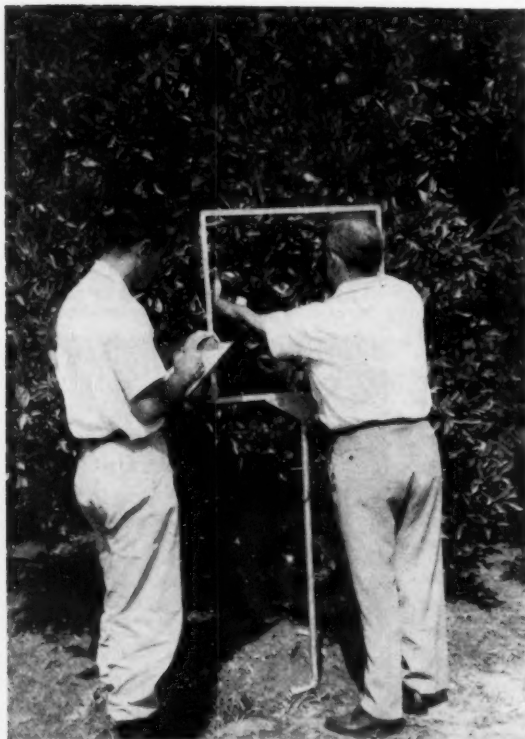
Gerald Engelman is Head of the Livestock Section, Market Organization and Costs Branch, AMS. Raymond O. Gaarder is a member of his staff.



A tape measure is used to find the circumference of limb. Then, by counting number of oranges on that limb, statisticians can estimate number of oranges on entire tree.

Crews of statisticians from the Florida State Crop and Livestock Reporting Service travel through orchards . . .

Estimating the Annual Orange Crop



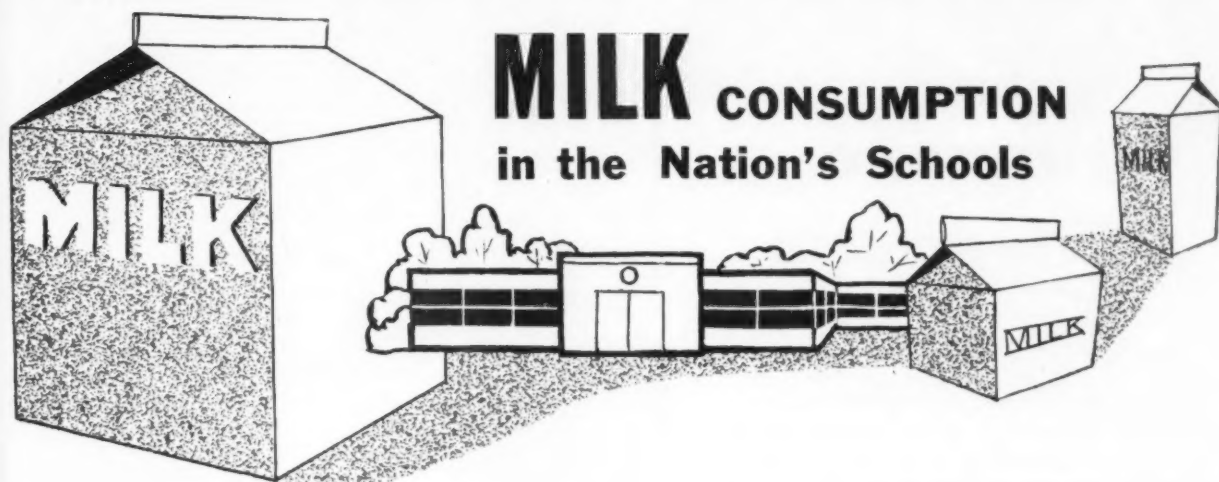
Statisticians use counting frame to get some idea of number of oranges within fixed area. Calipers, at right, measure circumference of oranges and, from this, size at harvest is estimated.

A tape measure, calipers, and counting frame—this is the odd assortment of tools used to predict the size of the Florida orange crop. Armed with these instruments, statisticians work their way through the orange fields each fall, making preliminary estimates of the year's crop.

Such estimates are necessary for the orderly marketing of the fruit. Marketing men must know well in advance of the harvest season just how large a crop to expect.

The tape measure, calipers, and counting frame give them this information. Statisticians take these measurements, add them together, multiply them by the number of trees, and come up with a fairly accurate estimate of the annual orange crop in Florida.





MILK CONSUMPTION

in the Nation's Schools

by Kenneth E. Anderson

SCHOOL children drink lots of milk—particularly if they attend a school that participates in the National School Lunch and Special Milk Programs.

During March of 1957, children in public elementary and secondary schools purchased 409 million half-pints of milk. Of this total, 186 million half-pints were consumed with meals by children participating in the National School Lunch Program. An additional 204 million half-pints were sold in schools participating in the Special Milk Program (which includes most of the schools in the National School Lunch Program as well as other schools).

Taken together, these two programs accounted for about 390 million half-pints or 95 percent of all milk sold in public schools.

These estimates are based on a survey of 4,347 schools considered representative of all public schools below college level. Compiled and analyzed by the Market Development Branch of Agricultural Marketing Service, they present a clear-cut picture of the extent and depth of the two programs. They also show how the price and availability of milk affects consumption rates.

For example, per capita as well as total milk consumption was highest in

the area where the price of milk to children was lowest due to normally lower milk prices and price reductions through the Special Milk Program. Consumption also was high when milk was served with plate lunches.

Regionally, the Midwest had the largest total volume of milk consumption. Yet this area had the least proportion of its schools serving milk or participating in the Special Milk Program. The reason for this apparent paradox was simply this. There were more schools in this area than in other parts of the country; those in the program charged relatively less for their milk; and the youngsters, therefore, drank more milk.

Nearly as much milk, however, was consumed in the Northeast and Southeast. And here a greater proportion of all schools participated in the Special Milk Program.

In fact, during the survey month, some 67,000 schools in the United States (or, 63 percent of all public schools) participated in the Special Milk Program. The Program was found in 84 percent of the schools operating under the National School Lunch program, in 73 percent of other schools serving plate lunches, in 52 percent of those having a la carte service only, and in 38 percent of those without lunch service.

Schools in urban areas, large schools, and combination grade schools took the most advantage of the Program. About half the milk

was served with plate lunches. The other half was purchased as an a la carte item, or as a supplement to packed lunches.

On the average, each child enrolled in a school participating in the Special Milk Program drank 0.7 half-pints of milk daily. That's 40 percent more than the 0.5 half-pint average of children enrolled in other schools serving milk but not participating in the Special Milk Program.

Availability was, of course, a major factor influencing per capita consumption. But price, too, played an important role. Pupils in schools in the Special Milk Program paid an average of 3.1 cents per half-pint of milk, while other school children paid 5.9 cents. For the child whose school participated in both the National School Lunch and Special Milk Programs, the price was still lower—2.9 cents.

Under the Special Milk Program many needy children also received milk without charge. Some 30 million additional half-pints were served free during March 1957. This accounted for about 7 percent of the total consumption in all schools serving milk. Last year, schools operating under the Special Milk Program served 1.8 billion half-pints of whole milk—an increase of nearly 290 percent over 1955. Not only does this represent an expansion of the Special Milk Program, but an increase in per capita consumption.

The author is an agricultural economist in the Marketing Research Division of AMS.

TURKEYS

YEAR-ROUND

Turkey, traditional American bird, is a more popular food now than ever before. It's eaten year-round instead of just on special occasions.

Modern production and processing methods have made it possible to grow enough turkeys and sell them reasonably enough so that we all can eat our fill. Before World War II, when turkey was considered holiday fare, we ate an average of only 2.2 pounds per person. Last year, this figure reached almost 6 pounds, and it is expected to go even higher as the idea of turkey as an everyday food grows and new methods of merchandising are developed.

A high-protein, low-fat food, turkey fits in well with present-day diet demands. It is also one of our safest, best protected foods. Last year, 686 million pounds of turkeys were processed under U. S. Department of Agriculture inspection. After January 1, all poultry products sold across State lines will be required to carry the U. S. inspection mark.

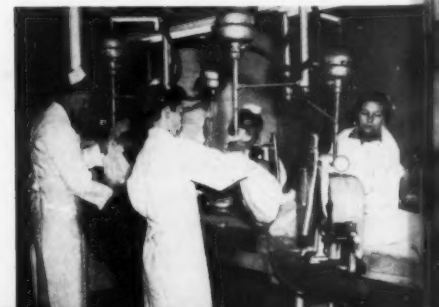


This is the story of how a modern poultry processing plant moves turkeys down its assembly line. As first step, turkeys are removed from crates, placed on the line.

From chill tanks, where they have cooled overnight, turkeys move to the drainage line. Here, the water drains off the birds. Girl at extreme right stretches neck skin to help drainage.



Ready for packaging, each bird goes over scales and its weight is marked on bag. A vacuum lifter sucks air from bag, which is clipped shut.





Killing, scalding come next; then, turkeys go through two types of pickers. After washing, legs are removed and birds are placed in "3-point suspension."



The internal organs of each turkey receive the thorough scrutiny of a Department of Agriculture inspector to insure wholesomeness.



On eviscerating line, lungs and kidneys are removed by vacuum. Next operation, not shown here, is removal of neck, which is replaced in body cavity.



After a final washing, turkeys are graded by USDA grader, sized, and placed in chill tanks to cool overnight before being packed.

Conveyor moves packaged turkeys into "shrinker" for brief immersion in hot water. Patented transparent bag will then be "form fitting."



Emerging from bag shrinker, packaged turkeys are packed by weight classes and weights are tallied by grade and size. They are now ready for market.



BIG CHANGES IN MARKETING LARD

by John W. Thompson

LARD, which not so many years ago suffered severely from the stiff competition of manufactured shortening, now is offering just as stiff competition to the ingredients that make up that shortening.

About 15 percent of all lard produced in this country last year went into the manufacture of shortening. Twenty years ago, practically no lard was used for this purpose.

The reason for lard's successful comeback has been its strong bargaining power. It usually sells for less than most vegetable oils. Because of this, shortening manufacturers have been willing to adapt their operations to include lard.

Along with this price advantage goes a better quality lard. Renderers have changed their operation to suit requirements of the shortening industry. They are turning out a more uniform, high-quality product that is acceptable for use in compounds.

Before 1945, lard was sold almost exclusively for "direct" use. That is, both domestic and foreign consumption was in pure lard. Manufactured products did not come into the picture until after World War II. Then, a new market opened for the lard industry; lard became an important ingredient in shortening and, to a lesser degree, in margarine.

Between 1947 and 1951, an average of 138 million pounds of lard was used in shortening, and by 1957 this had

increased to 376 million pounds. An additional 25 million pounds of commercial lard went into the production of margarine last year.

However, in the first six months of 1958, the use of lard in shortening dropped 6 percent. This was because manufacturers found soybean oil less expensive at this particular time.

Fluctuations like this are to be expected. When, once again, the price of lard is lower than that of soybean oil, lard will resume its previous role in the manufacture of shortening. It may even gain for itself some of cottonseed oil's share, since in recent years cottonseed oil production has decreased.

The willingness of processors to use lard in their manufactured prod-

ucts has already had an effect on the method of handling and storing lard. Lard is a seasonal commodity which reaches its peak production in the fall and winter. At this time of year, its volume is high and its cost low.

Manufacturers who take advantage of lower fall and winter prices must find a place for their purchases. Some processors increase their production of lard products in these peak months, substituting it in large quantities for other fats and oils. Others rent or buy storage facilities for their lard purchases.

In previous years, buyers and sellers stored their lard in drums or placed it in 400-pound tierces. Both these practices were costly. So, today, most lard is bought loose, and the cost of drumming is eliminated. According to trade sources, this allows a manufacturer to save 1¾ cents a pound on his lard, plus certain other carrying charges which are also eliminated by storing loose lard.

As the advantages of substituting lard for vegetable oils increase, the buyer becomes more price conscious and the prices of competing fats and oils tend to draw closer together. This helps stabilize lard prices and makes for a more orderly marketing of this important farm commodity.

This is the way shortening and margarine manufacturers today buy their lard. No longer drummed, it arrives for processing in bulk tank cars; steam liquifies lard so that it can be drained from car.



The author is an agricultural economist in the Marketing Research Division of AMS.

Americans are smoking more . . .

Tobacco Consumption Turns Upward



by Arthur G. Conover

FOR THOSE who produce and market tobacco, the current consumption picture is filled with smoke clouds. And that's good.

The clouds, you see, are smoke puffs resulting from the increased consumption of cigarettes, cigars, cigarillos, pipe tobacco, and "roll-your-own" cigarettes.

This is welcome news to tobacco growers who recently have been worried about the decrease in the quantity of tobacco being used in these products.

This year there was little if any change from last year in the average number of cigarettes made from a pound of tobacco (farm-sales weight). Total output, however, increased enough to require a larger amount of leaf. A further increase in the amount of tobacco used to manufacture cigarettes is expected in 1958-59.

According to statistics compiled and analyzed by the Agricultural Economics division of AMS, cigarette output this year should hit a record 457 billion—17 billion more than in 1957. Almost all of these will be consumed by U. S. smokers here and overseas; only 18 billion will be exported for foreign consumption.

Economists predict a further increase in the domestic consumption of cigarettes as the population of smoking age increases and as more women start smoking. Also some people who have switched to filter-tips are now smoking more of these cigarettes.

A rather surprising development in

the tobacco picture has been in the amount of tobacco used for pipe and "roll-your-own" cigarettes. For some reason or other, possibly because of the recession in some areas, smoking tobacco for pipes and roll-your-owns has suddenly increased. This is the first upturn in 9 years, and it puts the 1958 output of smoking tobacco at 77 million pounds—6½ million pounds above 1957.

At the same time, production of cigars and cigarillos also increased. But, unlike cigarettes, their manufacture did not require any appreciable increase in amount of tobacco. Instead, manufacturers produced more small-size cigars and used more sheet binder as a substitute for natural leaf.

This year's production of cigars and cigarillos seems likely to reach 6.4 billion, the highest in nearly 30 years. In 1959, this figure may be even larger. However, economists still don't know whether this actually will mean more tobacco for these two products. The amount of sheet binder used in cigars has not yet become stabilized nor has the trend toward cigarillos probably reached its peak.

Of all the tobacco products, only chewing tobacco and snuff failed to measure up to the production level of previous years. Chewing tobacco dropped from over 72 million pounds in 1957 to an estimated 69 million pounds this year, and economists expect this downward trend to continue. Snuff consumption, on the other hand, should hold steady in the year ahead. Its 1958 output dropped only 2 million pounds, from 36 to 34 million.

How these production and consumption changes have affected the

supplies of the various types of tobacco is a story in itself. In most instances, this year's crop was not enough to meet the annual needs of manufacturers and exporters, but with ample carryovers from previous crops, total supplies of leaf are still large.

This is particularly true for cigarette tobaccos. The 1958 flue-cured tobacco crop was up 10 percent, but burley and Maryland tobacco production was down slightly. And, the increased production of flue-cured tobacco was still well below the post-war average.

The 1958-59 total supply of each of these three kinds has been estimated at less than 1957-58 levels. Flue-cured tobacco is down about 3 percent; burley is off 1½ percent; and Maryland, 1 percent.

Because of the switch to sheet binders for cigars and cigarillos, growers of Connecticut binder tobacco, with the assistance of the Soil Bank, have drastically curtailed production. Supplies are the lowest on record. Connecticut Valley binder types are down 20 percent from a year ago. Supplies of Wisconsin binder types, which are also used in scrap chewing manufacture, are down 5 percent.

Continental filler supplies are up—but up only 2 percent from a record low. On the other hand, supplies of shade-grown cigar wrapper types are up 3 percent over a record high.

The total supply of fire-cured tobacco, the tobacco that goes into snuff, is estimated at a tenth lower than for 1957-58 and the smallest on record. Supplies of air-cured and sun-cured tobacco, mainly chewing tobaccos, are also down.

Arthur G. Conover is author of the *Tobacco Situation*, an AMS publication.



ACCENT ON QUALITY

NEW YORK CO-OP CONTROLS

EGG QUALITY FROM NEST . . .

by Daniel A. Alfieri



Constant checking and rechecking of the many factors that affect egg quality during farm handling is the success secret of Federal-State on-farm grading program used by New York cooperative. New 24-dozen case was also developed to insure safer handling of eggs.



MODERN, healthy hens lay high-quality table eggs. Yet, many of these eggs drop below Grade A somewhere between the nest and the country assembly point.

To find out exactly why and where this egg quality loss occurs—and to stop it—one New York State farmers' cooperative initiated its own quality control program. Aided by the Federal-State Egg Grading Service, it began grading eggs at the farm level.

This type of program had been sponsored by the U. S. Department of Agriculture for several years on the West coast, but it was entirely new to the East. The New York State Department of Agriculture, which is the cooperating agency in the Federal-State Grading Service, was anxious to know if it would work equally well in its area. It wasn't long before it had its answer. Three months of on-farm grading produced results that were nothing short of "terrific."

The New York cooperative found that by grading eggs at the farm, it was able to market consistently top-quality eggs. The demand for its product was good and so were the returns to the farmer-members.

With on-farm grading well under way, the cooperative began looking for other ways to improve the quality of its eggs and to more efficiently operate its program.

Cartoning was its second big venture. A 24-dozen egg case was developed for the cooperative—again with the aid of the Federal-State Egg Grading Service. Used for farm to co-op deliveries, it features a special filler-flat to assure safer transportation of the eggs.

At the assembly point, new time-saving equipment has been installed. A hand-operated pressure lift picks up 4 dozen eggs at a time, the entire contents of one filler-flat.

The author is an AMS information specialist, New York area office.



TO CONSUMER

A mechanical numbering device keeps accurate count of each farmer's shipment, noting eggs in the various size categories.

In addition to mechanized handling, the grading process has been accelerated. A number of licensed graders stationed along the "egg assembly line" now perform this operation in one-third to one-half the time previously necessary.

This Federal-State grading program insures week-after-week top-quality receipts. It places the cooperative in the enviable position of offering buyer customers in New York City eggs that can be rehandled with predictable processing costs so far as yield is concerned.

Each of these production and marketing improvements has contributed to the quality and value of the eggs marketed by the cooperative. It has created a demand for this particular brand and has meant a stable outlet and better price for the producer-members.

This cooperative was the first in the area to pay its farmers a premium for extra-large eggs. Also, the better the yield, the more money a farmer receives. The higher the percentage of AA and A eggs in a yield, the greater the premium to the farmer.

Since top quality means more money to the producer, the incentive to have the impartial USDA grading certificate show a high percentage of AA yield is practically self-sustained. In an average month, only one farmer out of 24 showed a yield below 90 percent AA and A. The overall average that month for AA and A eggs was 91.3 percent.

What does it all boil down to? Cooperation all along the way. With the help of the Federal-State Egg Grading Service, farmers have become more quality conscious. They have found that efficiency results in greater profits. It produces a top-quality egg that attracts customers and establishes a ready market.



Hand-operated pressure lift picks up 4 dozen eggs at a time, enough to completely fill tray in co-op's newly designed 24-dozen egg case.



Eggs are mechanically sorted according to size and move along conveyor belt to grading stations where they are candled and cartoned by licensed graders. Below, grader keeps official quality record. Members get premium for eggs grading better than 90% AA and A.



Displaying Paper-Packaged Produce on Ice

HOW DO YOU display paper-packaged produce and keep it cool when no mechanical refrigeration is available?

In a recent study, W. E. Tolle, AMS marketing specialist, found that a polyethylene cover over a bed of ice provides a safe method of displaying paper-packaged produce.

When polyethylene sheeting is used, water damage is practically eliminated. At the end of a 72-hour test period, the sales appearance of 81 percent of the packages on polyethylene was still good, and the other 19 percent showed only slight damage.

At the same time, the packages displayed on polyethylene-covered ice remained at a relatively safe display temperature. The average temperature within the packages was 38.5°F.—only 4° higher than packages placed on kraft paper covers.

Another advantage of using poly-

ethylene covers is that the sheeting is inexpensive, can be cleaned easily, and reused repeatedly.

Several other types of ice covers also were tested by the AMS Plant Industry Station in Beltsville, Md.

One of these coverings was kraft paper. After 24 hours, this paper became water-soaked, and the boxed produce on top became unappealing. However, kraft paper covers did provide good cooling for the produce.

In other tests, sheet metal and wire mesh were used as ice covers. Again, the produce was sufficiently cooled, but this time the paper cartons were damaged by condensation of water on the surface of the metal.

When kraft paper was used in combination with sheet metal or wire mesh, the results were no better.

So, still another type of covering was tested—polyethylene-coated kraft paper. This material was much more

satisfactory. After a 72-hour test period, the appearance of packages displayed on the coated paper was good. Cooling also was sufficient.

On the basis of this research, further tests were made with polyethylene sheeting, first by itself, then in combination with metal sheeting, wire mesh, and kraft paper. These tests showed that the polyethylene sheeting alone was responsible for the increased protection afforded the packages.

The sheeting, however, did have one noticeable disadvantage. As soon as the produce was removed, the cover crept forward over the ice bed. Researchers easily remedied this situation by attaching the sheeting to the produce case.

Thus, still another use has been found for polyethylene. Sheets of this material can serve as an ice cover to protect retail displays of produce in trays, cartons, and bags.

Cotton Bale Package Adds to Textile Mill Costs

THE tattered and torn bale, long a trademark of American cotton, isn't offensive to the eye only but to the pocketbook as well.

Economists in the Market Organization and Costs Branch of AMS estimate that nearly \$3 million a year is spent by domestic spinners in cleaning bale surfaces and on other preprocessing practices resulting from the bale package.

Much of this added expense at the mill can be blamed on improper application of the covers and the mess made by conventional sampling and handling practices. While manmade fibers and cotton from a number of foreign countries arrive at the mills in neat, compact packages, American cotton packages are still "clumsy, dirty, expensive, and wasteful."

About 85 percent of all domestic mills clean the outer surface of at least some of the bales received. They have to do some surface cleaning on about half the bales they use. And, of the bales cleaned, half are cleaned on all surfaces and one-third on the heads and one or two sides.

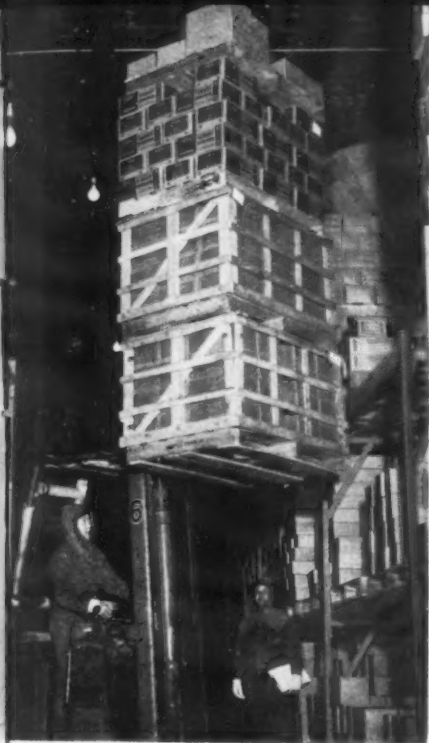
The cost of this "extra" operation necessary for U. S.-grown cotton adds to the costs of domestic mills. This, in turn, increases the price of cotton products and makes it harder for cotton to compete with other fibers for markets.

Agricultural economists figure that, on the average, it costs domestic mills about 25 cents to clean a bale of cotton. Other preprocessing costs, also resulting from bale covers and the condition of the bales, run about

20 cents a bale of cotton.

This means that for about half of the bales consumed, domestic mills have incurred preprocessing costs of about 45 cents per bale due to the fault of the American bale package. When spread over all the American cotton consumed, these costs amount to a little over 33 cents per bale—or, a total of \$3,000,000 a year.

These costs, together with similar costs which foreign mills have to pay when they use American cotton and several types of direct costs to other segments of the domestic industry, affect the competitive position of American cotton and account for the various efforts being made by industry and the USDA to improve the domestic bale package.



A LOOK AT OUR NATION'S REFRIGERATOR

by Kenneth D. Ackers

Nowadays, regardless of the season, refrigerated warehouses are used for storing a wide variety of perishable commodities. Apples, meats, and eggs are still being stored in quantity, but they are far exceeded by the tonnage of frozen fruits, vegetables, poultry and dairy products.

The American public has gone for frozen foods in a big way. These convenience items have simplified the housewife's cooking chores and have even made the life of the bachelor much more pleasant.

Consumer acceptance of frozen foods is responsible, in part, for the vast assortment of foods found in our Nation's refrigerator. As such, it has enlarged the marketing opportunities of the grower, processor, distributor, broker, and warehouseman.

It has also changed the way in which refrigerated plants are being constructed and the places in which they are located. To bring freezing facilities closer to the points of production, many refrigerated warehouses have been located away from terminal markets.

In the central market era, many of the refrigerated warehouses were multi-floor houses. Not so any longer. The cold storage warehouses being built today are generally single-story units that may cover several acres of land. Some are so large that electrically powered scooters are necessary to transport warehouse inspectors and supervisors through the plant.

Ceiling heights within the refrigerated room may range upward to 20 feet in a single-floor unit. This is nearly 11 feet higher than the average ceiling of many older multifloor houses.

The newer warehouses still have

both cooler and freezer space, but the emphasis is on more freezer space which, in many instances, can be mechanically converted to cooler space.

Instead of powered elevators, hand carts and physical labor being used for loading and unloading products, electrically powered lifts now move and stack palletized loads within the warehouses. A single palletized load may weigh as much as a ton, and these units can be stacked 5 to 6 pallets high in a single-story warehouse.

Each month, data on the stocks of perishable food items held in cold storage are recorded and published in the Cold Storage Report put out by the Agricultural Estimates Division of AMS. This information helps all those involved in marketing frozen food products to appraise the supply situation. It puts them in a better position to bring about a more efficient distribution of farm products.

Along this conveyor belt are stored nearly 700 different brands and sizes of frozen food items.



THE growing popularity of frozen foods has put new life into our country's refrigerated warehousing industry. In the last 20 years, these warehouses have expanded their facilities to a whopping 901 million cubic feet.

This is only the beginning. Refrigerated warehouse space is expanding with each new year. Ever since 1947, an average of 23 million cubic feet has been added annually to our Nation's refrigerator.

With our present capacity, we have sufficient space to accommodate some 9 billion pounds of frozen meats, fruits and vegetables, juices, soups, seafoods, fancy desserts, foreign dishes, and prepared meals plus a variety of other perishable food items.

Not so long ago, apples, red meats, and shell eggs were the chief occupants of cold storage facilities. And even these items were only seasonally put under refrigeration—eggs in the spring and early summer months; apples and red meats in the fall and winter.

The author is a statistician in the Agricultural Estimates Division of AMS.

OFFICIAL BUSINESS

New Era for Poultry Industry

A NEW ERA in the poultry industry begins January 1—the day that the Poultry Products Inspection Act goes fully into effect.

The law requires Federal inspection after January 1 for all poultry and poultry products shipped across State lines. It also stipulates that any plant engaged in interstate commerce must process all of its product under inspection.

Some processing plants which operate on a seasonal basis only, or may be planning to engage in interstate commerce for the first time, have not yet applied for inspection service. Operators of such plants, or any who desire information or advice about the new law or the inspection service should get in touch with the Poultry Inspection Branch, Poultry Division, Agricultural Marketing Service, U. S. Department of Agriculture, Washington 25, D. C., or with one of the area poultry inspection supervisors.

These supervisors and the States they service are as follows:

*Dr. Harry E. Gaskill, Room 210
180 New Montgomery Street
San Francisco, Calif.*

States supervised—Arizona California, Idaho, Montana, Nevada, Oregon, Utah, Washington, Wyoming.

*Dr. William S. Buchanan
1014 U. S. Customs House
610 South Canal Street
Chicago 7, Ill.*

States supervised—Illinois, Indiana, Kentucky, Michigan, Missouri, Ohio, Wisconsin.

*Dr. Robert B. Mericle
224 Iowa Building
Des Moines 9, Iowa*

States supervised—Colorado, Iowa, Kansas, Minnesota, Nebraska, North Dakota, South Dakota.

*Dr. John R. Harney
200 Customs Building
Second and Chestnut Streets
Philadelphia 6, Pa.*

States—Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island,

Vermont, Virginia, West Virginia.
*Dr. Jonathan K. Keim, Room 221
Peachtree Bldg.
900 Peachtree St. N.E.
Atlanta 9, Ga.*

States supervised—Alabama, Florida, Georgia, Mississippi, North Carolina, South Carolina, Tennessee.
*Dr. Kenneth M. McEnroe, Room 558
Terminal Annex Building
Dallas 2, Texas*

States supervised—Arkansas, Louisiana, New Mexico, Oklahoma, Texas.

Shipping Point Prices on Ready-to-Cook Turkeys

Prices paid at country shipping points for ready-to-cook turkeys are now, for the first time, available to the public. Since October 1, the Federal-State Dairy and Poultry Market News Office in Des Moines has been providing this information on an experimental basis.

For several years, the Federal-State Market News Service has issued farm prices on live turkeys. Now, however, the volume of ready-to-cook turkeys being marketed has increased enough to warrant the same kind of information on these birds.

The new report reflects prices received by shippers in Iowa, Minnesota, Wisconsin, Missouri, Kansas, Nebraska, Illinois, and South Dakota. Issued once a week, it includes the

volume moved and prices received for carlot and trucklot quantities of ready-to-cook, frozen, Government-inspected turkeys. It also gives the size and kind of turkeys sold.

The Des Moines and other market news field offices gather this information each Wednesday from a large number of processors in the eight-State area. It is then compiled and released the same day from the Des Moines office.

The information is being made available to radio and television stations, newspapers, and press associations. It moves over the Agricultural Marketing Service's teletype system to all market news offices throughout the country and is also distributed nationally through mail reports.

